

Lady Elizabeth Eastlake

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Lady Elizabeth Eastlake
By Hill & Adamson
[Getty Museum](#)

Photography

It is now more than fifteen years ago that specimens of a new and mysterious art were first exhibited to our wondering gaze. They consisted of a few heads of elderly gentlemen executed in a bistre-like colour upon paper. The heads were not above an inch long, they were little more than patches of broad light and shade, they showed no attempt to idealise or soften the harshnesses and accidents of a rather rugged style of physiognomy--on the contrary, the eyes were decidedly contracted, the mouths expanded, and the lines and wrinkles intensified.

Nevertheless we examined them with the keenest admiration, and felt that the spirit of Rembrandt had revived. Before that time little was the existence of a power, availing itself of the eye of the sun both to discern and to execute, suspected by the world--still less that it had long lain the unclaimed and unnamed legacy of our own Sir Humphry Davy. Since then photography has become a household word and a household want; is used alike by art and science, by love, business, and justice; is found in the most sumptuous saloon, and in the dingiest attic--in the solitude of the Highland cottage, and in the glare of the London gin-palace in the pocket of the detective, in the cell of the convict, in the folio of the painter and architect, among the

papers and patterns of the millowner and manufacturer, and on the cold brave breast on the battle-field.

The annals of photography, as gathered from the London Directory, though so recent, are curious. As early as 1842 one individual, of the name of Beard, assumed the calling of a daguerreotype artist. In 1843 he set up establishments in four different quarters of London, reaching even to Wharf Road, City Road, and thus alone supplied the metropolis until 1847. In 1848 Claudet and a few more appear on the scene, but, owing to then existing impediments, their numbers even in 1852 did not amount to more than seven. In 1855 the expiration of the patent and the influence of the Photographic Society swelled them to sixty-six--in 1857 photographers have a heading to themselves and stand at 147.

These are the higher representatives of art. But who can number the legion of petty dabblers, who display their trays of specimens along every great thoroughfare in London, executing for our lowest servants, for one shilling, that which no money could have commanded for the Rothschild bride of twenty years ago? Not that photographers flock especially to the metropolis; they are wanted everywhere and found everywhere. The large provincial cities abound with the sun's votaries, the smallest town is not without them; and if there be a village so poor and remote as not to maintain a regular establishment, a visit from a photographic travelling van gives it the advantages which the rest of the world are enjoying. Thus, where not half a generation ago the existence of such a vocation was not dreamt of, tens of thousands (especially if we reckon the purveyors of photographic materials) are now following a new business, practising a new pleasure, speaking a new language, and bound together by a new sympathy.

For it is one of the pleasant characteristics of this pursuit that it unites men of the most diverse lives, habits, and stations, so that whoever enters its ranks finds himself in a kind of republic, where it needs apparently but to be a photographer to be a brother. The world was believed to have grown sober and matter-of-fact, but the light of photography has revealed an unsuspected source of enthusiasm. An instinct of our nature, scarcely so worthily employed before, seems to have been kindled, which finds

something of the gambler's excitement in the frequent disappointments and possible prizes of the photographer's luck. When before did any motive short of the stimulus of chance or the greed of gain unite in one uncertain and laborious quest the nobleman, the tradesman, the prince of blood royal, the innkeeper, the artist, the manservant, the general officer, the private soldier, the hard-worked member of every learned profession, the gentleman of leisure, the Cambridge wrangler, the man who bears some of the weightiest responsibilities of this country on his shoulder, and, though last, not least, the fair woman whom nothing but her own choice obliges to be more than the fine lady? The records of the Photographic Society, established in 1853, are curiously illustrative of these incongruities. Its first chairman, in order to give the newly instituted body the support and recognition which art was supposed to owe it, was chosen expressly from the realms of art. Sir Charles Eastlake therefore occupied the chair for two years; at the end of which the society selected a successor quite as interested and efficient from a sphere of life only so far connected with art and science as being their very antipodes, namely, Sir Frederick Pollock the Chief Baron of England. The next chairman may be a General fresh from the happy land where they photograph the year round; the fourth, for aught that can be urged to the contrary, the Archbishop of Canterbury. A clergyman of the Established Church has already been the editor to the journal of the society. The very talk of these photographic members is unlike that of any other men, either of business or pleasure. Their style is made of the driest facts, the longest words, and the most high-flown rhapsodies. Slight improvements in processes, and slight varieties in conclusions, are discussed as if they involved the welfare of mankind. They seek each other's sympathy, and they resent each other's interference, with an ardour of expression at variance with all the sobrieties of business, and the habits of reserve; and old-fashioned English *mauvaise honte* is extinguished in the excitement, not so much of a new occupation as of a new state. In one respect, however, we can hardly accuse them of the language of exaggeration. The photographic body can no longer be considered only a society, it is becoming 'one of the institutions of the country.' Branches from the parent tree are flourishing all over the United Kingdom. Liverpool assists Norwich, Norwich congratulates Dublin, Dublin fraternises with the Birmingham and Midland

Institute, London sympathises with each, and all are looking with impatience to Manchester. Each of these societies elect their officers, open their exhibitions, and display the same encouraging medley of followers. The necessity too for regular instruction in the art is being extensively recognised. The Council of King's College have instituted a lectureship of photography. Photographic establishments are attached to the Royal Arsenal at Woolwich; a photographic class is opened for the officers of the Royal Artillery and Engineers; lectures are given at the Royal Institution, and popular discourses at Mechanics' Institutes. Meanwhile British India has kept pace with the mother country. The Photographic Society at Bombay is only second in period of formation to that of London. Calcutta, Madras, Bengal, and minor places all correspond by means of societies. The Elphinstone Institution has opened a class for instruction. Nor is the feeling of fellowship confined to our own race. The photographic and political alliance with France and this country was concluded at about the same period, and we can wish nothing more than that they may be maintained with equal cordiality. The Duke de Luynes, a French nobleman of high scientific repute, has placed the sum of 10,000 francs at the disposal of the Paris Photographic Society, to be divided into two prizes for objects connected with the advance of the art,--the prizes open to the whole world. The best landscape photographs at the *Exposition des Beaux Arts* were English, the best architectural specimens in the London Exhibition are French. The Exhibition at Brussels last October was more cosmopolitan than Belgian. The Emperors of Russia and Austria, adopting the old way for paying new debts, are bestowing snuff-boxes on photographic merit. These are but a few of the proofs that could be brought forward of the wide dissemination of the new agent, and of the various modes of its reception, concluding with a juxtaposition of facts which almost ludicrously recall paragraphs from the last speech from the throne; for while our Queen has sent out a complete photographic apparatus for the use of the King of Siam, the King of Naples alone, of the whole civilised world, has forbidden the practice of the works of light in his dominions!

Our chief object at present is to investigate the connexion of photography with art--to decide how far the sun may be considered an artist, and to what branch of imitation his powers are best adapted. But we must first give a brief history of

those discoveries which have led to the present efficiency of the solar pencil. It appears that the three leading nations the French, the English, and the Germans--all share in the merit of having first suggested, then applied, and finally developed the existence of the photographic element. It may not be superfluous to all our readers to state that the whole art in all its varieties rests upon the fact of the blackening effects of light upon certain substances, and chiefly upon silver, on which it acts with a decomposing power. The silver being dissolved in a strong acid, surfaces steeped in the solution became encrusted with minute particles of the metal, which in this state darkened with increased rapidity. These facts were first ascertained and recorded, as regards chloride of silver, or silver combined with chlorine, in 1777, by Scheele, a native of Pomerania, and in 1801, in connexion with nitrate of silver, by Ritter of Jena. Here therefore were the raw materials for the unknown art; the next step was to employ them. And now we are at once met by that illustrious name to which we have alluded. Sir Humphry Davy was the first to make the practical application of these materials, and to foresee their uses. In conjunction with Mr. Thomas Wedgwood, only less eminent than his brother Josiah, Sir Humphry succeeded, by means of a camera obscura, in obtaining images upon paper, or white leather prepared with nitrate of silver--of which proceeding he has left the most interesting record in the *Journal of the Royal Society* for June, 1802. Their aim, as the title shows, was not ambitious; but the importance lay in the first stain designedly traced upon the prepared substance, not in the thing it portrayed. In one sense, however, it was very aspiring, if colour as well as form were sought to be transferred, as would appear from their attempt to copy coloured glass; otherwise it is difficult to account for their selecting this particular material.¹

Besides showing the possibility of imprinting the forms of objects thus reflected in the camera, the paper in question proceeds to describe the process since known as 'Photographic Drawing,' by which leaves, or lace, or the wings of insects, or any flat and semi-transparent substances, laid upon prepared paper, and exposed to the direct action of the sun, will leave the perfect tracery of

¹ An account of a method of copying paintings upon glass and making *profiles* by the agency of light upon nitrate of silver, with observations by Humphry Davy.

their forms. But having thus conjured up the ethereal spirit of photography, they failed in all attempts to retain it in their keeping. The charm once set agoing refused to stop-- the slightest exposure to light, even for the necessary purposes of inspection, continued the action, and the image was lost to view in the darkening of the whole paper. In short, they wanted the next secret, that of rendering permanent, or, in photographic language, of *fixing* the image. Here, therefore, the experiment was left to be taken up by others, though not without a memento of the prophetic light cast on the mind's eye of the great elucidator; for Sir Humphry observes, 'Nothing but a method of preventing the unshaded parts of the delineation from being coloured by the exposure to the day is wanted to render this process as useful as it is elegant.'

Meanwhile, in 1803, some remarkable experiments were made by Dr. Wollaston, proving the action of light upon a resinous substance known in commerce as "gum guaiacum;" and in due time another workman entered the field who availed himself of this class of materials. The name of Joseph Nicéphore de Niépce is little known to the world as one of the founders of the now popular art, his contributions being exactly of that laborious and rudimental nature which later inventions serve to conceal. He was a French gentleman of private fortune, who lived at Châlon-sur-Saone, and pursued chemistry for his pleasure. Except also in the sense of time, he cannot be called a successor to Davy and Wedgwood; for it is probable that the path they had traced was unknown to him. Like them, however, he made use of the camera to cast his images; but the substance on which he received them was a polished plate of pewter, coated with a thin bituminous surface. His process is now rather one of the curiosities of photographic history; but, such as it was, it gained the one important step of rendering his creations permanent. The labours of the sun in his hands remained spell-bound, and remain so still. He began his researches in 1814, and was ten years before he attained this end. To M. Niépce also belongs the credit of having at once educed the high philosophic principle, since then universally adopted in photographic practice, which put faith before sight--the conviction of what must be before the appearance of what is. His pictures, on issuing from the camera, were invisible to the eye, and only disengaged by the application of a solvent which removed those shaded parts

unhardened by the action of the light. Nor do they present the usual reversal of the position of light and shade, known in photographic language as a *negative* appearance; but whether taken from nature or from an engraving, are identical in effect, or what is called *positives*. But though, considering all these advantages, the art of Heliography, as it was called by its author, was at that early period as great a wonder as any that have followed it, yet it was deficient in those qualities which recommend a discovery to an impatient world. The process was difficult, capricious, and tedious. It does not appear that M. Niépce ever obtained an image from nature in less than between seven to twelve hours, so that the change in lights and shadows necessarily rendered it imperfect; and in a specimen we have seen, the sun is shining on opposite walls. Deterred probably by this difficulty from any aspirations after natural scenes, M. Niépce devoted his discovery chiefly to the copying of engravings. To this he sought to give a practical use by converting his plate, by means of the application of an acid, into a surface capable of being printed by the ordinary methods. Here again he was successful, as specimens of printed impressions still show, though under circumstances too uncertain and laborious to encourage their adoption. Thus the comparative obscurity in which his merits have remained is not Difficult to comprehend; for while he conquered many of the greater difficulties of the art, he left too many lesser ones for the world to follow in his steps. To these reasons may be partially attributed the little sensation which the efforts of this truly modest and ingenious gentleman created in this country, which he visited in 1827, for the purpose, he states, of exhibiting his results to the Royal Society, and of rendering homage of his discovery to his Britannic Majesty. A short memorial, drawn up by himself, was therefore forwarded, with specimens, to the hands of George IV.; but a rule on the part of the Royal Society to give no attention to a discovery which involves a secret proved a barrier to the introduction of M. Niépce's results to that body. Dr. Wollaston was the only person of scientific eminence to whom they appear to have been exhibited; and, considering their intrinsic interest, as well as the fact of his being in some sort their progenitor, it is difficult to account for the little attention he appears to have paid them. M. Niépce therefore returned to his own country, profoundly convinced of the English inaptitude for photographic knowledge.

In the mean time the indiscretion of an optician revealed to the philosopher of Châlon the fact that M. Daguerre, a dioramic artist by profession, was pursuing researches analogous to his own in Paris. This led to an acquaintance between the two, and finally to a legal partnership in the present pains and possible profits of the new art. M. Niépce died in 1833 without, it seems, contributing any further improvement to the now common stock; and M. Daguerre, continuing his labours, introduced certain alterations which finally led to a complete change in the process. Suffice it to say that, discarding the use of the bituminous varnish, and substituting a highly polished tablet of silver, he now first availed himself of that great agent in photographic science, the action of iodine, by means of which the sensitiveness of his plate was so increased as to render the production of the image an affair of fewer minutes than it had previously been of hours. At the same time the picture, still invisible, was brought to light by the application of the fumes of mercury, after which a strong solution of common salt removed those portions of the surface which would otherwise have continued to darken, and thus rendered the impression permanent.

Here, therefore, was a representation obtained in a few minutes by a definite and certain process, which was exquisitely minute and clear in detail, capable of copying nature in all her stationary forms, and also true to the natural conditions of light and shade. For the fumes of mercury formed minute molecules of a white colour upon those parts of the iodised tablet darkened by the light, thus producing the lights to which the silver ground supplied the shades.

In 1839 the results of M. Daguerre's years of labour, called after himself the Daguerreotype, came forth fully furnished for use; and in the June of that year gave rise to a remarkable scene in the French Chambers. The question before the deputies was this: MM. Daguerre and Niépce jun. (for the partnership gave all the advantages of M. Daguerre's discovery to the son of his late colleague) were possessed of a secret of the utmost utility, interest, and novelty to the civilised world--a secret for which immense sacrifices of time, labour, and money had been made, but which, if restricted by patent for their protection, would be comparatively lost to society. A commission had therefore been appointed by the French Government to inquire

into its merits, and the secret itself intrusted to M. Arago, who succeeded at once in executing a beautiful specimen of the art. Thus practically convinced, he addressed the Chamber in a speech which is a masterpiece of scientific summary and philosophic conclusion. He pointed out the immense advantages which might have been derived, "for example, during the expedition to Egypt, by a means of reproduction so exact and so rapid." He observed that "to copy the millions and millions of hieroglyphics which entirely cover the great monuments at Thebes, Memphis and Carnac, &c., would require scores of years and legions of artists; whereas with the daguerreotype a single man would suffice to bring this vast labour to a happy conclusion." He quoted the celebrated painter De la Roche in testimony of "the advantage to art by designs perfect as possible, and yet broad and energetic--where a finish of inconceivable minuteness in no respect disturbs the repose of the masses, nor impairs in any manner the general effect." The scene was French in the highest sense-- at once scientific, patriotic, and withal dramatic,--France herself treating for the creations of genius on the one hand, and on the other dispensing them, "a gift to the whole world." It was repeated in the Chamber of Peers, who, in addition to other arguments addressed to them by M. Gay-Lussac, were reminded, with a true French touch, that 'even a field of battle in all its phases may be thus delineated with a precision unattainable by any other means !' The result was that a pension of 10,000 francs was awarded for the discovery-- 6000 to M. Daguerre, 4000 to M. Niépce. The seals which retained the secret were broken, and the daguerreotype became the property of the world.

We unwillingly recall a fact which rather mars the moral beauty of this interesting proceeding, viz. that by some chicanery a patent for the daguerreotype was actually taken out in England, which for a time rendered this the only country which did not profit by the liberality of the French Government. The early history of photography is not so generous in character as that of its maturity.

It may be added that all that has been since done for the daguerreotype are improvements in the same direction. It has that mark of a great invention--not to require or admit of any essential deviation from its process. Those who

have contributed to perfect it are also of the same race as the inventor. The names of M. Fizeau and M. Claudet are associated with its present state. The first, by using a solution of chloride of gold, has preserved the daguerreotype from abrasion, and given it a higher tone and finish; while M. Claudet, who has variously contributed to the advance of the art, by the application of chloride of bromine with iodine, has accelerated a hundredfold the action of the plate; at the same time, by a prolongation of a part of the process, he has, without the aid of mercury, at once converted the image into a positive, the silver ground now giving the lights instead, as before, of the shades of the picture.

We may now turn to England, and to those discoveries which, though less brilliant in immediate result, yet may be said to have led to those practical uses which now characterise the new agent. The undivided honour of having first successfully worked out the secret of photography in England belongs to Mr. Fox Talbot. He also is a private gentleman, living in the country, and pursuing chemical researches for his own pleasure. In his case it may be strictly said that he took up the ground to which Davy and Wedgwood had made their way. Paper was the medium he adhered to from the beginning, and on which he finally gained the victory. We have no account of the repeated essays and disappointments by which this gentleman advanced step by step to the end in view. All we know is that the French success on metal and the English success on paper were, strange to say, perfectly coincident in date. Daguerre's discovery was made known in Paris in January, 1839; and in the same month Mr. Fox Talbot sent a paper to the Royal Society, giving an account of a method by which he obtained pictures on paper, rendered them unalterable by light, and by a second and simple process, which admitted of repetition to any extent, restored the lights and shadows to their right conditions.

This announcement fell, like the pictures of light themselves, upon ground highly excited in every way to receive and carry it forward. It was immediately taken up by Sir John Herschel, who commenced a series of experiments of the utmost practical importance to photography and science in general, one of the first results of which was the discovery of the hyposulphate of soda as the best agent for dissolving the superfluous salts, or, in other words, of fixing the picture. This was

one of those steps which has met with general adoption. Another immediate impulse was given by a lecture read at the London Institution in April, 1839, and communicated by the Rev. J. B. Reade, recommending the use of gallic acid in addition to iodide or chloride of silver as a means of greatly increasing the sensitiveness of the preparation. Again, Mr. Robert Hunt, since known as the author of the work that heads this article, published at the British Association at Plymouth, in 1841, another sensitive process, in which the ferrocyanate of potash was employed; and in 1844 the important use of the protosulphate of iron in bringing out, or, as it is termed, *developing* the latent picture. Other fellow-labourers might be mentioned, too, all zealous to offer some suggestion of practical use to the new-born art. Meanwhile Mr. Fox Talbot, continuing to improve on his original discovery, thought fit in 1842 to make it the subject for a patent, under the name of the calotype process. In this he is accused of having incorporated the improvements of others as well as his own, a question on which we have nothing to say, except that at this stage of the invention the tracks of the numerous exploring parties run too close to each other to be clearly identified. As to the propriety of the patent itself, no one can doubt Mr. Fox Talbot's right to avail himself of it, though the results show that the policy may be questioned. For this gentleman reaped a most inadequate return, and the development of the art was materially retarded. In the execution of a process so delicate and at the best so capricious as that of photography, the experience of numbers, such as only free-trade can secure, is required to define the more or less practical methods. Mr. F. Talbot's directions, though sufficient for his own pre-instructed hand, were too vague for the tyro; and an enlistment into the ranks of the "Pilgrims of the Sun" seldom led to any result but that of disappointment. Thus, with impediments of this serious nature, photography made but slow way in England; and the first knowledge to many even of her existence came back to us from across the Border. It was in Edinburgh where the first earnest, professional practice of the art began, and the calotypes of Messrs. Hill and Adamson remain to this day the most picturesque specimens of the new discovery.

It was at this crisis that a paper published in the "Philosophical Transactions" of May, 1844, by Mr. George Cundell, gave in great measure the fresh stimulus that was needed. The world was

full of the praise of the daguerreotype, but Mr. Cundell stood forth as the advocate of the calotype or paper process, pointed out its greater simplicity and inexpensiveness of apparatus, its infinite superiority in the power of multiplying its productions, and then proceeded to give those careful directions for the practice, which, though containing no absolutely new element, yet suggested many a minute correction where every minutia is important. With the increasing band of experimentalists who arose--for all photographers are such now ensued the demand for some material on which to receive their pictures less expensive than the silver plate, and less capricious than paper. However convenient as a medium, this latter, from the miscellaneous nature of its antecedents, was the prolific parent of disappointment. Numerous expedients were resorted to render it more available--it was rubbed, polished, and waxed, but, nevertheless, blotches and discolorations would perpetually appear, and that at the very moment of success, which sorely tried the photographic heart. The Journal of the Society sends up at this time one vast cry of distress on this subject, one member calling unto another for help against the common enemy. Under these circumstances many a longing eye was fixed upon glass as a substitute; and numerous experiments, among which those by Sir John Herschel were the earliest and most successful, were tried to render this material available. But glass itself was found to be an intractable material; it has no powers of absorption, and scarcely any affinities. The one thing evidently needed was to attach some transparent neutral coating of extreme tenuity to its surface, and in due time the name of Niépce again appears supplying the intermediate step between failure and success. M. Niépce de St. Victor, nephew to the inventor of heliography, is known as the author of the albumen process, which transparent and adhesive substance being applied to glass, and excited with the same chemical agents as in the calotype process, is found to produce pictures of great beauty and finish. But, ingenious as is the process, and often as it is still used, it fails of that unsurpassable fitness which alone commands universal adoption. The amalgamation of the substances is tedious and complicated, and the action of the light much slower. The albumen process was a great step, and moreover a step in the right direction; for it pointed onward to that discovery which has reduced the difficulties of the art to the lowest sum, and raised its powers, in one respect at all events, to the highest possibility,

viz. to the use of collodion. The Daguerre to this Niépce was a countryman of our own Mr. Scott Archer --who is entitled to fame not only for this marvelous improvement, but for the generosity with which he threw it open to the public. The character of the agent, too, adds interest to the invention. The birth and parentage of collodion are both among the recent wonders of the age. Gun-cotton--partly a French, partly a German discovery--is but a child in the annals of chemical science; and collodion, which is a solution of this compound in ether and alcohol, is its offspring. Its first great use was, as is well known, in the service of surgery; its second in that of photography. Not only did the adoption of this vehicle at once realise the desires of the most ardent photographer--not only, thus applied, did it provide a film of perfect transparency, tenuity, and intense adhesiveness--not only was it found easy of manipulation, portable and preservable--but it supplied that element of rapidity which more than anything else has given the miraculous character to the art. Under the magician who first attempted to enlist the powers of light in his service, the sun seems at best to have been but a sluggard; under the sorcery of Niépce he became a drudge in a twelve-hours' factory. On the prepared plate of Daguerre and on the sensitive paper of Fox Talbot the great luminary concentrates his gaze for a few earnest minutes; with the albumen-sheathed glass he takes his time more leisurely still; but at the delicate film of collodion which hangs before him finer than any fairy's robe, and potent only with invisible spells-- he literally does no more than wink his eye, tracing in that moment, with a detail and precision beyond all human power, the glory of the heavens, the wonders of the deep, the fall, not of the avalanche, but of the apple, the most fleeting smile of the babe, and the most vehement action of the man.

Further than this the powers of photography can never go; they are already more nimble than we need. Light is made to portray with a celerity only second to that with which it travels; it has been difficult to contrive the machinery of the camera to keep pace with it, and collodion has to be weakened in order to clog its wheels.

While these practical results occupied the world, more fundamental researchers had been carried on. By the indefatigable exertions of Sir John Herschel and Mr. Hunt the whole scale of mineral and other simple substances were tested

in conjunction with tried and untried chemical processes, showing how largely nature abounds with materials for photographic action.

Preparations of gold, platinum, mercury, iron, copper, tin, nickel, manganese, lead, potash &c. were found more or less sensitive and capable of producing pictures of beauty and distinctive character. The juices of beautiful flowers were also put into requisition, and papers prepared with the colours of the *Corchorus japonica*, the common ten-weeks' stock, the marigold, the wallflower, the poppy, the rose, *Senecio splendens*, &c., have been made to receive delicate though in most cases fugitive images. By these experiments, though tending little to purposes of utility, the wide relations and sympathies of the new art have been in some measure ascertained, and its dignity in the harmonious scale of natural phenomena proportionably raised.

When once the availability of one great primitive agent is thoroughly worked out, it is easy to foresee how extensively it will assist in unravelling other secrets in natural science. The simple principle of the stereoscope, for instance, might have been discovered a century ago, for the reasoning which led to it was independent of all the properties of light, but it could never have been illustrated, far less multiplied as it now is, without photography. A few diagrams, of sufficient identity and difference to prove the truth of the principle, might have been constructed by hand for the gratification of a few sages, but no artist, it is to be hoped, could have been found possessing the requisite ability and stupidity to execute the two portraits, or two groups, or two interiors, or two landscapes, identical in every minutia of the most elaborate detail, and yet differing in point of view by the inch between the two human eyes, by which the principle is brought to the level of any capacity. Here, therefore, the accuracy and insensibility of a machine could alone avail; and if in the order of things the cheap popular toy which the stereoscope now represents was necessary for the use of man, the photograph was first necessary for the service of the stereoscope.

And while photography is thus found ready to give its aid to other agencies, other agencies are in turn ready to cooperate with that. The invention now becoming familiar to the public by the name of photo-galvanic engraving is a most interesting instance of this reciprocity of

action. That which was the chief aim of Niépce in the humblest dawn of the art, viz. to transform the photographic plate into a surface capable of being printed, which had been *bona fide* realised by Mr. Fox Talbot, M. Niépce de St. Victor, and others, but by methods too complicated for practical use, is now by the co-operation of electricity with photography done with the simplicity and perfection which fulfil all conditions. This invention is the work of M. Pretsch of Vienna, and deserves a few explanatory words. It differs from all other attempts for the same purpose in not operating upon the photographic tablet itself, and by discarding the usual means of varnishes and bitings in. The process is simply this. A glass tablet is coated with a gelatine diluted till it forms a jelly, and containing bichromate of potash, nitrate of silver and iodide of potassium. Upon this when dry is placed, face downwards, a paper positive, through which the light, being allowed to fall, leaves upon the gelatine a representation of the print. It is then soaked in water, and while the parts acted upon by the light are comparatively unaffected by the fluid, the remainder of the jelly swells, and rising above the general surface gives a picture in relief, resembling an ordinary engraving upon wood. Of this intaglio a cast is now taken in gutta-percha, to which the electro process in copper being applied, a plate or matrix is produced bearing on it an exact repetition of the original positive picture. All that now remains to be done is to repeat the electro process, and the result is a copper plate, in the necessary relieve, of which, as the company who have undertaken to utilise the invention triumphantly set forth, nature furnishes the materials, and science the artist, the inferior workman being only needed to roll it through the press.

And here, for the present, terminate the more important steps of photographic development, each in its turn a wonder, and each in its turn obtained and supported by wonders only a little older than itself. It was not until 1811 that the chemical substance called iodine, on which the foundations of all popular photography rest, was discovered at all; bromine, the only other substance equally sensitive, not till 1826. The invention of the electro process was about simultaneous with that of photography itself. Gutta-percha only just preceded the substance of which collodion is made; the ether and chloroform, which are used in some methods, that of collodion. We say nothing of the optical

improvements purposely contrived or adapted for the service of the photograph--the achromatic lenses, which correct the discrepancy between the visual and chemical foci; the double lenses, which increase the force of the action; the binocular lenses, which do the work of the stereoscope; nor of the innumerable other mechanical aids which have sprung-up for its use; all things, great and small, working together to produce what seemed at first as delightful, but as fabulous, as Aladdin's ring, which is now as little suggestive of surprise as our daily bread. It is difficult now to believe that the foundations of all this were laid within the memory of a middle-aged gentleman, by a few lonely philosophers, incognizant of each other, each following a glimmer of light through years of toil, and looking upward to that Land of Promise to which beaten tracks and legible handposts now conduct an army of devotees. Nevertheless, there is no royal road thrown open yet. Photography is, after all, too profoundly interwoven with the deep things of Nature to be entirely unlocked by any given method. Every individual who launches his happiness on this stream finds currents and rocks not laid down in the chart. Every sanguine little couple who set up a glass-house at the commencement of summer, call their friends about them, and toil alternately in broiling light and stifling gloom, have said before long, in their hearts, "Photography, thy name is disappointment!" But the photographic back is fitted to the burden. Although all things may be accused in turn--their chemicals, their friends, and even Nature herself--yet with the next fine day there they are at work again, successively in hope, excitement, and despair, for, as Schiller says,--

"Etwas fürchten, und hoffen, und sorgen
Muss der Mensch für den
kommenden Morgen."

At present no observation or experience has sufficed to determine the state of atmosphere in which the photographic spirits are most propitious; no rule or order seems to guide their proceedings. You go out on a beautifully clear day, not a breath stirring, chemicals in order, and lights and shadows in perfection; but something in the air is absent, or present, or indolent, or restless, and you return in the evening only to develop a set of blanks. The next day is cloudy and breezy, your chemicals are neglected, yourself disheartened, hope is gone, and with it the needful care; but here again something in the

air is favourable, and in the silence and darkness of your chamber pictures are summoned from the vasty deep which at once obliterate all thought of failure. Happy the photographer who knows what is his enemy, or what is his friend; but in either case it is too often 'something,' he can't tell what; and all the certainty that the best of experience attains is, that you are dealing with one of those subtle agencies which, though Ariel-like it will serve you bravely, will never be taught implicitly to obey.

As respects the time of the day, however, one law seems to be thoroughly established. It has been observed by Daguerre and subsequent photographers that the sun is far more active, in a photographic sense, for the two hours before, than for the two hours after it has passed the meridian. As a general rule, too, however numerous the exceptions, the cloudy day is better than the sunny one. Contrary, indeed, to all preconceived ideas, experience proves that the brighter the sky that shines above the camera the more tardy the action within it. Italy and Malta do their work slower than Paris. Under the brilliant light of a Mexican sun, half an hour is required to produce effects which in England would occupy but a minute. In the burning atmosphere of India, though photographical the year round, the process is comparatively slow and difficult to manage; while in the clear, beautiful, and, moreover, cool light of the higher Alps of Europe, it has been proved that the production of a picture requires many more minutes, even with the most sensitive preparations, than in the murky atmosphere of London. Upon the whole, the temperate skies of this country may be pronounced most favourable to photographic action, a fact for which the prevailing characteristic of our climate may partially account, humidity being an indispensable condition for the working state both of paper and chemicals.

But these are at most but superficial influences--deeper causes than any relative dryness or damp are concerned in these phenomena. The investigation of the solar attributes, by the aid of photographic machinery, for which we are chiefly indebted to the researches of Mr. Hunt and M. Claudet, are, scientifically speaking, the most interesting results of the discovery. By these means it is proved that besides the functions of light and heat the solar ray has a third, and what may be called photographic

function, the cause of all the disturbances, decompositions, and chemical changes which affect vegetable, animal, and organic life. It had long been known that this power, whatever it may be termed--energia--actinism--resided more strongly, or was perhaps less obstructed, in some of the coloured rays of the spectrum than in others--that solutions of silver and other sensitive surfaces were sooner darkened in the violet and the blue than in the yellow and red portions of the prismatic spectrum. Mr. Hunt's experiments further prove that mere light, or the luminous ray, is little needed where the photographic or "chemical ray" is active, and that sensitive paper placed beneath the comparative darkness of a glass containing a dense purple fluid, or under that deep blue glass commonly used as a finger-glass, is photographically affected almost as soon as if not shaded from the light at all. Whereas, if the same experiment be tried under a yellow glass or fluid, the sensitive paper, though robbed neither of light nor heat, will remain a considerable time without undergoing any change.²

We refer our readers to this work for results of the utmost interest--our only purpose is to point out that the defects or irregularities of photography are as inherent in the laws of Nature as its existence being coincident with the first created of all things. The prepared paper or plate which we put into the camera may be compared to a chaos, without form and void, on which the merest glance of the sun's rays calls up image after image till the fair creation stands revealed: yet not revealed in the order in which it met the solar eye, for while some colours have hastened to greet his coming, others have been found slumbering at their posts, and have been left with darkness in their lamps. So impatient have been the blues and violets to perform their task upon the recipient plate, that the very substance of the colour has been lost and dissolved in the solar presence; while so laggard have been the reds and yellows and all tints partaking of them, that they have hardly kindled into activity before the

² We may add, though foreign to our subject, that the same experiment applied by Mr. Hunt to plants has been attended with analagous results. Bulbs of tulips and ranunculuses have germinated beneath yellow and red glasses, but the plant has been weakly and has perished without forming buds. Under a green glass (blue being a component part of the colour) the plants have been less feeble, and have advanced as far as flower-buds; while beneath the blue medium perfectly healthy plants have grown up, developing their buds, and flowering in perfection.

light has been withdrawn. Thus it is that the relation of one colour to another is found changed and often reversed, the deepest blue being altered from a dark mass into a light one, and the most golden-yellow from a light body into a dark.

It is obvious, therefore, that however successful photography may be in the closest imitation of light and shadow, it fails, and must fail, in the rendering of true chiaroscuro, or the true imitation of light and dark. And even if the world we inhabit, instead of being spread out with every variety of the palette, were constituted but of two colours--black and white and all their intermediate grades--if every figure were seen in monochrome like those that visited the perturbed vision of the Berlin Nicolai--photography could still not copy them correctly. Nature, we must remember, is not made up only of actual lights and shadows; besides these more elementary masses, she possesses innumerable reflected lights and half-tones, which play around every object, rounding the hardest edges, and illuminating the blackest breadths, and making that sunshine in a shady place, which it is the delight of the practised painter to render. But of all these photography gives comparatively no account. The beau ideal of a Turner and the delight of a Rubens are caviar to her. Her strong shadows swallow up all timid lights within them, as her blazing lights obliterate all intrusive halftones across them; and thus strong contrasts are produced, which, so far from being true to Nature, it seems one of Nature's most beautiful provisions to prevent.

Nor is this disturbance in the due degree of chiaroscuro attributable only to the different affinities for light residing in different colours, or to the absence of true gradation in light and shade. The quality and texture of a surface has much to do with it. Things that are very smooth, such as glass and polished steel, or certain complexions and parts of the human face, or highly-glazed satin-ribbon--or smooth leaves, or brass-buttons--every thing on which the light *shines* as well as everything that is perfectly white, will photograph much faster than other objects, and thus disarrange the order of relation. Where light meets light the same instantaneous command seems to go forth as that by which it was at first created, so that, by the time the rest of the picture has fallen into position, what are called the high lights have so rioted in action as

to be found far too prominent both in size and intensity.

And this bring us to the artistic part of our subject, and to those questions which sometimes puzzle the spectator, as to how far photography is really a picturesque agent, what are the causes of its successes and its failures, and what in the sense of art are its successes and failures? And these questions may be fairly asked now when the scientific processes on which the practice depends are brought to such perfection that, short of the coveted attainment of colour, no great improvement can be further expected. If we look round a photographic exhibition we are met by results which are indeed honourable to the perseverance, knowledge, and in some cases to the taste of man. The small, broadly-treated, Rembrandt-like studies representing the sturdy physiognomies of Free Church Ministers and their adherents, which first cast the glamour of photography upon us, are replaced by portraits of the most elaborate detail, and of every size not excepting that of life itself. The little bit of landscape effect, all blurred and uncertain in forms, and those lost in a confused and discoloured ground, which was nothing and might be anything, is superseded by large pictures with minute foregrounds, regular planes of distance, and perfectly clear skies. The small attempts at architecture have swelled into monumental representations of a magnitude, truth, and beauty which no art can surpass--animals, flowers, pictures, engravings, all come within the grasp of the photographer; and last, and finest, and most interesting of all, the sky with its shifting clouds, and the sea with its heaving waves, are overtaken in their course by a power more rapid than themselves.

But while ingenuity and industry--the efforts of hundreds working as one--have thus enlarged the scope of the new agent, and rendered it available for the most active, as well as for the merest still life, has it gained in an artistic sense in like proportion? Our answer is not in the affirmative, nor is it possible that it should be so. Far from holding up the mirror to nature, which is an assertion usually as triumphant as it is erroneous, it holds up that which, however beautiful, ingenious, and valuable in powers of reflection, is yet subject to certain distortions and deficiencies for which there is no remedy. The science therefore which has developed the resources of photography, has but more glaringly

betrayed its defects. For the more perfect you render an imperfect machine the more must its imperfections come to light: it is superfluous therefore to ask whether Art has been benefited, where Nature, its only source and model, has been but more accurately falsified. If the photograph in its early and imperfect scientific state was more consonant to our feelings for art, it is because, as far as it went, it was more true to our experience of Nature. Mere broad light and shade, with the correctness of general forms and absence of all convention, which are the beautiful conditions of photography, will, when nothing further is attempted, give artistic pleasure of a very high kind; it is only when greater precision and detail are superadded that the eye misses the further truths which should accompany the further finish.

For these reasons it is almost needless to say that we sympathise cordially with Sir William Newton, who at one time created no little scandal in the Photographic Society by propounding the heresy that pictures taken slightly out of focus, that is, with slightly uncertain and undefined forms, "though less *chemically* would be found more *artistically* beautiful." Much as photography is supposed to inspire its votaries with aesthetic instincts, this excellent artist could hardly have chosen an audience less fitted to endure such a proposition. As soon as could an accountant admit the morality of a false balance, or a seamstress the neatness of a puckered seam, as your merely scientific photographer be made to comprehend the possible beauty of "a slight *burr*." His mind proud science never taught to doubt the closest connexion between cause and effect, and the suggestion that the worse photography could be the better art was not only strange to him, but discordant. It was hard too to disturb his faith in his newly acquired powers. Holding, as he believed, the keys of imitation in his camera, he had tasted for once something of the intoxicating dreams of the artist; gloating over the pictures as they developed beneath his gaze, he had said in his heart "anch' io son pittore." Indeed there is no lack of evidence in the Photographic Journal of his believing that art had hitherto been but a blundering groper after that truth which the cleanest and precisest photography in his hands was now destined to reveal. Sir William Newton, therefore, was fain to allay the storm by qualifying his meaning to the level of photographic toleration, knowing that, of all the delusions which possess the

human breast, few are so intractable as those about art.

But let us examine a little more closely those advances which photography owes to science--we mean in an artistic sense. We turn to the portraits, our *premiers amours* now taken under every appliance of facility both for sitter and operator. Far greater detail and precision accordingly appear. Every button is seen--piles of stratified flounces in most accurate drawing are there,-- what was at first only suggestion is now all careful making out,-- but the likeness to Rembrandt and Reynolds is gone! There is no mystery in this. The first principle in art is that the most important part of a picture should be best done. Here, on the contrary, while the dress has been rendered worthy of a fashion-book, the face has remained, if not so unfinished as before, yet more unfinished in proportion to the rest. Without referring to M. Claudet's well-known experiment of a falsely coloured female face, it may be averred that, of all the surfaces of a few inches square the sun looks upon, none offers more difficulty, artistically speaking, to the photographer, than a smooth, blooming, clean washed, and carefully combed human head. The high lights which gleam on this delicate epidermis so spread and magnify themselves, that all sharpness and nicety of modelling is obliterated--the fineness of skin peculiar to the under lip reflects so much light, that in spite of its deep colour it presents a light projection, instead of a dark one--the spectrum or intense point of light on the eye is magnified to a thing like a cataract. If the cheek be very brilliant in colour, it is as often as not represented by a dark stain. If the eye be blue, it turns out as colourless as water; if the hair be golden or red, it looks as if it had been dyed, if very glossy it is cut up into lines of light as big as ropes. This is what a fair young girl has to expect from the tender mercies of photography--the male and the older head, having less to lose, has less to fear. Strong light and shade will portray character, though they mar beauty. Rougher skin, less glossy hair, Crimean moustaches and beard overshadowing the white under lip, and deeper lines, are all so much in favour of a picturesque result. Great grandeur of feature too, or beauty of *pose* and sentiment, will tell as elevated elements of the picturesque in spite of photographic mismanagement. Here and there also a head of fierce and violent contrasts, though taken perhaps from the meekest of mortals, will remind us of the Neapolitan or Spanish school, but,

generally speaking, the inspection of a set of faces, subject to the usual conditions of humanity and the camera, leaves us with the impression that a photographic portrait, however valuable to relative or friend, has ceased to remind us of a work of art at all.

And, if further proof were wanted of the artistic inaptitude of this agent for the delineation of the human countenance, we should find it in those magnified portraits which ambitious operators occasionally exhibit to our ungrateful gaze. Rightly considered, a human head, the size of life, of average intelligence, and in perfect drawing, may be expected, however roughly finished, to recall an old Florentine fresco of four centuries ago. But, "ex nihilo, nihil fit." the best magnifying lenses can in this case only impoverish in proportion as they enlarge, till the flat and empty Magog which is born of this process is an insult, even in remotest comparison with the pencil of a Masaccio.

The falling off of artistic effect is even more strikingly seen if we consider the department of landscape. Here the success with which all accidental blurs and blotches have been overcome, and the sharp perfection of the object which stands out against the irreproachably speckless sky, is exactly as detrimental to art as it is complimentary to science. The first impression suggested by these buildings of rich tone and elaborate detail, upon a glaring white background without the slightest form or tint, is that of a Chinese landscape upon looking-glass. We shall be asked why the beautiful skies we see in the marine pieces cannot be also represented with landscapes; but here the conditions of photography again interpose. The impatience of light to meet light is, as we have stated, so great, that the moment required to trace the forms of the sky (it can never be traced in its cloudless gradation of tint) is too short for the landscape, and the moment more required for the landscape too long for the sky. If the sky be given, therefore, the landscape remains black and underdone; if the landscape be rendered, the impatient action of the light has burnt out all cloud-form in one blaze of white. But it is different with the sea, which, from the liquid nature of its surface, receives so much light as to admit of simultaneous representation with the sky above it. Thus the marine painter has both hemispheres at his command, but the landscape votary but one; and it is but natural that he

should prefer Rydal Mount and Tintern Abbey to all the baseless fabric of tower and hill which the firmament occasionally spreads forth. But the old moral holds true even here. Having renounced heaven, earth makes him, of course, only an inadequate compensation. The colour green, both in grass and foliage, is now his great difficulty. The finest lawn turns out but a gloomy funeral-pall in his hands; his trees, if done with the slower paper process, are black, and from the movement, uncertain webs against the white sky,—if by collodion, they look as if worked in dark cambric, or stippled with innumerable black and white specks; in either case missing all the breadth and gradations of nature. For it must be remembered that every leaf reflects a light on its smooth edge or surface, which, with the tendency of all light to over-action, is seen of a size and prominence disproportioned to things around it; so that what with the dark spot produced by the green colour, and the white spot produced by the high light, all intermediate grades and shades are lost. This is especially the case with hollies, laurels, ivy, and other smooth-leaved evergreens, which form so conspicuous a feature in English landscape gardening—also with foreground weeds and herbage, which, under these conditions, instead of presenting a sunny effect, look rather as if strewn with shining bits of tin, or studded with patches of snow.

For these reasons, if there be a tree distinguished above the rest of the forest for the harshness and blueness of its foliage, we may expect to find it suffer less, or not at all, under this process. Accordingly, the characteristic exception will be found in the Scotch fir, which, however dark and sombre in mass, is rendered by the photograph with a delicacy of tone and gradation very grateful to the eye. With this exception it is seldom that we find any studies of trees, in the present improved state of photography, which inspire us with the sense of pictorial truth. Now and then a bank of tangled bushwood, with a deep, dark pool beneath, but with no distance and no sky, and therefore no condition of relation, will challenge admiration. Winter landscapes also are beautiful, and the leafless Burnham beeches a real boon to the artist; but otherwise such materials as Hobbema, Ruysdael, and Cuyp converted into pictures unsurpassable in picturesque effect are presented in vain to the improved science of the photographic artist. What strikes us most frequently is the general *emptiness* of the scene he gives. A house stands

there, sharp and defined like a card-box, with black blots of trees on each side, all rooted in a substance far more like burnt stubble than juicy, delicate grass. Through this winds a white spectral path, while staring palings or linen hung out to dry (oh ! how unlike the luminous spots on Ruysdael's bleaching-grounds !), like bits of the white sky dropped upon the earth, make up the poverty and patchiness of the scene. We are aware that there are many partial exceptions to this; indeed, we hardly ever saw a photograph in which there was not something or other of the most exquisite kind. But this brings us no nearer the standard we are seeking. Art cares not for the right finish unless it be in the right place. Her great aim is to produce a whole; the more photography advances in the execution of parts, the less does it give the idea of completeness .

There is nothing gained either by the selection of more ambitious scenery. The photograph seems embarrassed with the treatment of several gradations of distance. The finish of background and middle distance seems not to be commensurate with that of the foreground; the details of the simplest light and shadow are absent; all is misty and bare, and distant hills look like flat, grey moors washed in with one gloomy tint. This emptiness is connected with the rapidity of collodion the action of which upon distance and middle ground does not keep pace with the hurry of the foreground. So much for the ambition of taking a picture. On the other hand, we have been struck with mere studies of Alpine masses done with the paper process, which allows the photograph to take its time, and where, from the absence of all foreground or intermediate objects, the camera has been able to concentrate its efforts upon one thing only--the result being records of simple truth and precision which must be invaluable to the landscape-painter.

There is no doubt that the forte of the camera lies in the imitation of one surface only, and that of a rough and broken kind. Minute light and shade, cognisant to the eye, but unattainable by hand, is its greatest and easiest triumph--the mere texture of stone, whether rough in the quarry or hewn on the wall, its especial delight. Thus a face of rugged rock, and the front of a carved and fretted building, are alike treated with a perfection which no human skill can approach; and if asked to say what photography has hitherto best succeeded in rendering, we should point to

everything near and rough--from the texture of the sea-worn shell, of the rusted armour, and the fustian jacket, to those glorious architectural pictures of French, English, and Italian subjects, which, whether in quality, tone, detail, or drawing, leave nothing to be desired.

Here, therefore, the debt of Science for additional clearness, precision, and size may be gratefully acknowledged. What photography can do is now, with her help, better done than before; what she can but partially achieve is best not brought too elaborately to light. Thus the whole question of success and failure resolves itself into an investigation of the capacities of the machine, and well may we be satisfied with the rich gifts it bestows, without straining it into a competition zenith art. For everything for which Art, so-called, has hitherto been the means but not the end, photography is the allotted agent--for all that requires mere manual correctness, and mere manual slavery, without any employment of the artistic feeling, she is the proper and therefore the perfect medium. She is made for the present age, in which the desire for art resides in a small minority, but the craving, or rather necessity for cheap, prompt, and torrent facts in the public at large. Photography is the purveyor of such knowledge to the world. She is the sworn witness of everything presented to her view. What are her unerring records in the service of mechanics, engineering, geology, and natural history, but facts of the most sterling and stubborn kind ? What are her studies of the various stages of insanity-- pictures of life unsurpassable in pathetic truth--but facts as well as lessons of the deepest physiological interest? What are her representations of the bed of the ocean, and the surface of the moon--of the launch of the Marlborough, and of the contents of the Great Exhibition--of Charles Kean's now destroyed scenery of the "Winter's Tale," and of Prince Albert's now slaughtered prize ox--but the facts which are neither the province of art nor of description, but of that new form of communication between man and man--neither letter, message, nor picture--which now happily fills up the space between them? What indeed are nine-tenths of those facial maps called photographic portraits, but accurate landmarks and measurements for loving eyes and memories to deck with beauty and animate with expression, in perfect certainty, that the ground-plan is founded upon fact?

In this sense no photographic picture that ever was taken, in heaven, or earth, or in the waters underneath the earth, of any thing, or scene, however defective when measured by an artistic scale, is destitute of a special, and what we may call an historic interest. Every form which is traced by light is the impress of one moment, or one hour, or one age in the great passage of time. Though the faces of our children may not be modelled and rounded with that truth and beauty which art attains, yet minor things--the very shoes of the one, the inseparable toy of the other--are given with a strength of identity which art does not even seek. Though the view of a city be deficient in those niceties of reflected lights and harmonious gradations which belong to the facts of which Art takes account, yet the facts of the age and of the hour are there, for we count the lines in that keen perspective of telegraphic wire, and read the characters on the playbill or manifesto, destined to be torn down on the morrow.

Here, therefore, the much-lauded and much-abused agent called Photography takes her legitimate stand. Her business is to give evidence of facts, as minutely and as impartially as, to our shame, only an unreasoning machine can give. In this vocation we can as little overwork her as tamper with her. The millions and millions of hieroglyphics mentioned by M. Arago may be multiplied by millions and millions more,--she will render all as easily and as accurately as one. When people, therefore, talk of photography, as being intended to supersede art, they utter what, if true, is not so in the sense they mean. Photography *is* intended to supersede much that art has hitherto done, but only that which it was both a misappropriation and a deterioration of Art to do. The field of delineation, having two distinct spheres, requires two distinct labourers; but though hitherto the freewoman has done the work of the bondwoman, there is no fear that the position should be in the future reversed. Correctness of drawing, truth of detail, and absence of convention, the best artistic characteristics of photography, are qualities of no common kind, but the student who issues from the academy with these in his grasp stands, nevertheless, but on the threshold of art. The power of selection and rejection, the living application of that language which lies dead in his paint-box, the marriage of his own mind with the object before him, and the offspring, half stamped with his own features, half with those of Nature, which is born of the union--whatever

appertains to the free-will of the intelligent being, as opposed to the obedience of the machine,--this, and much more than this, constitutes that mystery called Art, in the elucidation of which photography can give valuable help, simply by showing what it is not. There is, in truth, nothing in that power of literal, unreasoning imitation, which she claims as her own, in which, rightly viewed, she does not relieve the artist of a burden rather than supplant him in an office. We do not even except her most pictorial feats--those splendid architectural representations-- from this rule. Exquisite as they are, and fitted to teach the young, and assist the experienced in art, yet the hand of the artist is but ignobly employed in closely imitating the texture of stone, or in servilely following the intricacies of the zigzag ornament. And it is not only in what she can do to relieve the sphere of art, but in what she can sweep away from it altogether, that we have reason to congratulate ourselves. Henceforth it may be hoped that we shall hear nothing further of that miserable contradiction in terms "bad art"---and see nothing more of that still more miserable mistake in life "a bad artist." Photography at once does away with anomalies with which the good sense of society has always been more or less at variance. As what she does best is beneath the doing of a real artist at all, so even in what she does worst she is a better machine than the man who is nothing but a machine.

Let us, therefore, dismiss all mistaken ideas about the harm which photography does to art. As in all great and sudden improvements in the material comforts and pleasures of the public, numbers, it is true, have found their occupation gone, simply because it is done cheaper and better in another way. But such improvements always give more than they take. Where ten self-styled artists eked out a precarious living by painting inferior miniatures, ten times that number now earn their bread by supplying photographic portraits. Nor is even such manual skill as they possessed thrown out of the market. There is no photographic establishment of any note that does not employ artists at high salaries we understand not less than 1/ a day--in touching, and colouring, and finishing from nature those portraits for which the camera may be said to have laid the foundation And it must be remembered that those who complain of the encroachments of photography in this department could not even supply the demand. Portraits, as is evident to any thinking mind, and

as photography now proves, belong to that class of facts wanted by numbers who know and care nothing about their value as works of art. For this want, art, even of the most abject kind, was, whether as regards correctness, promptitude, or price, utterly inadequate. These ends are not only now attained, but, even in an artistic sense, attained far better than before. The coloured portraits to which we have alluded are a most satisfactory coalition between the artist and the machine. Many an inferior miniature-painter who understood the mixing and applying of pleasing tints was wholly unskilled in the true drawing of the human head. With this deficiency supplied, their present productions, therefore, are far superior to anything they accomplished, single-handed, before. Photographs taken on ivory, or on substances invented in imitation of ivory, and coloured by hand from nature, such as are seen at the rooms of Messrs. Dickinson, Claudet, Mayall, Kilburn, &c., are all that can be needed to satisfy the mere portrait want, and in some instances may be called artistic productions of no common kind besides. If, as we understand, the higher professors of miniature-painting--and the art never attained greater excellence in England than now--have found their studios less thronged of late, we believe that the desertion can be but temporary. At all events, those who in future desire their exquisite productions will be more worthy of them. The broader the ground which the machine may occupy, the higher will that of the intelligent agent be found to stand. If, therefore, the time should ever come when art is sought, as it ought to be, mainly for its own sake, our artists and our patrons will be of a far more elevated order than now: and if anything can bring about so desirable a climax, it will be the introduction of Photography.